

REMARKS

By this Amendment, claims 1, 4, 8, 21, and 25 are amended. No claims have been added or canceled. After entry of this amendment, claims 1-33 remain pending in the patent application. Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

Applicants appreciate the Examiner's consideration of the references cited in each of the Information Disclosure Statements. However, it appears that one reference, JP 04-305917 to Ozeki et al. (page 1 of the form PTO-1449 submitted January 7, 2005), has not been considered and no explanation has been given as to a reason why it may not have been considered. Applicants respectfully request that the Examiner consider this reference and initial and return the enclosed copy of that page of the PTO-1449 accordingly to indicate such consideration. Applicants submit a further Information Disclosure Statement herewith for consideration.

Applicants appreciate the Examiner's acknowledgement of a claim for priority from EP 02257822.3, filed November 12, 2002, and EP 03253692.2, filed June 11, 2003. A certified copy of EP 02257822.3 was inadvertently left out of the original filing and will be submitted at a future date.

The Examiner has required a new title in the present application that is indicative of the invention to which the claims are directed. Applicants respectfully submit that the title "Lithographic Apparatus and Device Manufacturing Method" is sufficiently descriptive of the claimed invention, at least in view of the fact that the title recites, almost exactly, the preambles of each of the independent claims. Applicants therefore respectfully request withdrawal of the objection to the title.

Claim 1 has been amended to correct typographical errors.

Claims 4, 8, 21, and 25 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The rejection is respectfully traversed.

Claims 4, 8, 21, and 25 have been amended to further recite the claimed invention without the intention of narrowing or otherwise limiting the scope of the claims. Applicants respectfully submit that the recitation of "a correction is applied to the measurement of the location" in claims 4 and 8 and the recitation of "applying a correction to the measurement of the location" in claims 21 and 25 is not indefinite. Applicants respectfully request reconsideration and withdrawal of the rejections of claims 4, 8, 21, and 25 under 35 U.S.C. § 112, second paragraph.

Claims 1-4, 9, 18-21, and 26 were rejected under 35 U.S.C. § 102(b) based on Takahashi (United States Patent No. 5,610,683). The rejection is respectfully traversed.

Claim 1 is patentable over Takahashi at least because the cited portions of Takahashi do not disclose, teach, or suggest a lithographic projection apparatus comprising, *inter alia*, “a measurement system configured to measure, not through said liquid, the location of each of a plurality of points on said substrate.” Takahashi discloses an immersion type projection exposure apparatus that transports a cassette (reference 9 in Figure 1 of Takahashi), including a wafer immersed in a liquid, to a wafer chuck (ref. 12) or an exposure stage (ref. 14). After the wafer-loaded and fluid-filled cassette is conveyed to the exposure stage, laser interferometer (ref. 15) interacts with reference mirror (ref. 16) for *measuring the position of the stage* (col. 5, lines 21-44 and col. 5, line 63 through col. 6, line 3 of Takahashi). Thus the cited portions of Takahashi do not disclose, teach, or suggest a measurement system configured to measure, *not through said liquid*, the location of *each of a plurality of points on said substrate*, as claimed. As a result, claim 1 is patentable over Takahashi.

On page 3 of the Office Action, the Examiner refers to elements 6, 15, and 16 of Takahashi as constituting a measurement system and states that these elements measure, not through a liquid in a space between the final element of the projection system and the substrate, the location of each of a plurality of points on the substrate. Applicants respectfully submit that the cited portions of Takahashi do not disclose, teach, or suggest such a capability.

Firstly, each of the elements 6, 15, and 16 disclosed in Takahashi, if they interact with the wafer at all, may interact with a wafer only when the wafer is located on the exposure stage (which includes X-Y stage 13 and fine-motion stage 14), as is clearly shown by their placement on the apparatus. As discussed in column 5, line 63 through column 6, line 21 of Takahashi, by the time the wafer is moved to the exposure stage (13, 14), it is already mounted within the cassette (9), *which is filled with a liquid* (23):

For exposure operation, first *a cassette 9 in which a wafer 2 having a photosensitive material is mounted and the inside of which is filled with a liquid 23, such as shown in FIG. 2, is taken out of the stock 10 by using the cassette conveying device 11-1. It is then placed on the cassette position rough detection mechanism 11-2 and, after prealignment operation, the cassette 9 is handled by the hand 11-3 and moved onto the wafer chuck 12 of the wafer stage.*

Col. 5, line 63 through col. 6, line 3 of Takahashi (emphasis added). Thus, measurements using elements 6, 15, and 16, if associated with the wafer at all, may be

associated with the wafer only when the cassette is loaded onto the exposure stage (13, 14). As noted, whenever the wafer (2) is in the cassette (9) and held by the stages (13, 14), it is immersed in a liquid. Therefore, even if the elements 6, 15, and 16 did measure the location of each of a plurality of points on the substrate (Applicants make no acknowledgement of the measuring capability of the elements 6, 15, and 16 of any kind), they are not configured to measure “not through said liquid” since the wafer is immersed in a liquid at all times it is on the exposure stage (13, 14). Accordingly, Applicants respectfully submit that claim 1 is patentable over the cited portions of Takahashi.

Claims 2-17 are patentable over Takahashi at least by virtue of their dependency from claim 1 and for the additional features recited therein.

With regard to method claim 18, the cited portions of Takahashi similarly do not disclose, teach, or suggest a device manufacturing method comprising, *inter alia*, “measuring the location of each of a plurality of points on a substrate using a measurement beam projected from a measurement system but not projected through said liquid.” As similarly discussed above with respect to claim 1, even if the elements 6, 15, and 16, as identified by the Examiner as constituting the measurement system of Takahashi, did measure points on a substrate (which capability is not acknowledged by Applicants), they would necessarily do so through a liquid between a final element of the projection system and the wafer since the wafer is always immersed in a liquid when it is on the exposure stage (elements 13 and 14 in Figure 1 of Takahashi). Applicants therefore respectfully submit that claim 18 is patentable over Takahashi.

Claims 19-33 are patentable over Takahashi at least by virtue of their dependency from claim 18 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-4, 9, 18-21, and 26 under 35 U.S.C. §102(b) based on Takahashi are respectfully requested.

Claims 5-8, 10-17, 22-25, and 27-33 were rejected under 35 U.S.C. § 103(a) based on Takahashi. The rejection is respectfully traversed.

As discussed above, claims 5-8 and 10-17 are believed to be patentable over Takahashi at least by virtue of their dependency from claim 1 and claims 22-25 and 27-33 are believed to be patentable over Takahashi at least by virtue of their dependency from claim 18. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 5-8, 10-17, 22-25, and 27-33 under 35 U.S.C. § 103 based on Takahashi.

Applicants have addressed all the Examiner's rejections and objections and respectfully submit that the application is in condition for allowance. A notice to that effect is earnestly solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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